Title (en)

LOW-VOLTAGE PUNCH-THROUGH TRANSIENT SUPPRESSOR EMPLOYING A DUAL-BASE STRUCTURE

Title (de)

DURCHBRUCHTRANSIERTER NIEDERSPANNUNGS-UNTERDRÜCKER MIT ZWEISCHICHTIGER BASIS

Title (fr)

LIMITEUR BASSE TENSION DE SURTENSION DE CLAQUAGE UTILISANT UNE STRUCTURE DE BASE DOUBLE

Publication

EP 0840943 A1 19980513 (EN)

Application

EP 96917059 A 19960603

Priority

- US 9608545 W 19960603
- US 49707995 A 19950630

Abstract (en)

[origin: WO9702606A1] A punch-through diode transient suppression device has a base region of varying doping concentration to improve leakage and clamping characterisics. The punch-through diode includes a first region comprising an n+ region (12), a second region comprising a p- region abutting the first region, a third region comprising a p+ region (16) abutting the second region, and a fourth region comprising an n+ region (18) abutting the third region. The peak dopant concentration of the n+ layers should be about 1.5E18 cm<3>, the peak dopant concentration of the p + layer should be between about 1 to about 5 times the peak concentration of the n+ layer, and the dopant concentration of the p- layer should be between about 0.5E14 cm<3> and about 1.0E17 cm<3>. The junction depth of the fourth (n+) region (18) should be greater than about 0.3 um. The thickness of the third (p+) region (16) should be between about 0.3 um and about 2.0 um, and the thickness of the second (p-) region should be between about 0.5 um and about 5.0 um.

IPC 1-7

H01L 29/861; H01L 29/866

IPC 8 full level

H01L 29/861 (2006.01); **H01L 29/866** (2006.01)

CPC (source: EP US)

H01L 29/861 (2013.01 - EP US); **H01L 29/8618** (2013.01 - EP US); **H01L 29/866** (2013.01 - EP US)

Citation (search report)

See references of WO 9702606A1

Designated contracting state (EPC)

DE FI

DOCDB simple family (publication)

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